

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Connect America Fund)	WC Docket No. 10-90
)	
Phase II Support for Price Cap Carriers)	
Serving Non-Contiguous Areas)	
)	
CAF II Cost Model Version 3.2)	DA 13-1846

COMMENTS OF HAWAIIAN TELCOM, INC.

Hawaiian Telcom, Inc. (“HTI”) hereby submits its comments in response to the Wireline Competition Bureau’s (“Bureau’s”) Public Notice concerning Connect America Cost Model Version 3.2 (CACM v3.2), which models costs associated with Connect America Fund (“CAF”) Phase II support for price cap carriers serving areas outside the contiguous United States.¹ The cost model changes identified in the Public Notice are intended to implement the Commission’s mandate that universal service fund (“USF”) support to price cap carriers take into account the unique characteristics of these non-contiguous areas, including the State of Hawaii.² HTI applauds Commission staff for moving forward with cost model changes for the non-contiguous areas. However, the proposed changes lead to virtually no additional support for HTI, which is

¹ Public Notice, *Wireline Competition Bureau Announces Availability of Version 3.2 of the Connect America Fund Phase II Cost Model, and Illustrative Results; Seeks Comment on Several Modifications for Non-Contiguous Areas*, WC Docket No. 10-90, DA 13-1846 (Wir. Comp. Bur., rel. Aug. 29, 2013) (“Public Notice”). The locations involved are the States of Alaska and Hawaii, and the territories of Puerto Rico, U.S. Virgin Islands, and the Commonwealth of the Northern Marianas Islands.

² *Connect America Fund*, WC Docket No. 10-90, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd 17663, ¶ 193 (2011), *pets. for review pending sub nom. In re: FCC 11-161*, No. 11-9900 (10th Cir., filed Dec. 18, 2011).

inconsistent with the fact that the cost of providing broadband and voice services to Hawaii consumers is higher than the CACM predicts.³

HTI has been on record since at least 2007 that the then-existing USF mechanisms for non-rural carriers (mostly price cap carriers) did not adequately support the provision of universal service in the State of Hawaii.⁴ HTI has previously identified the reasons why the CACM should reflect HTI's Hawaii-specific costs.⁵ HTI supports Alaska Communications System, Inc. ("ACS") cost showings, which should be better reflected in the CACM than were proposed in CACM v3.2.⁶ The Commission's broadband goals would be better served for non-contiguous areas of the country if further changes were made to the CACM than those proposed in Version 3.2, as more specifically described below.

I. CACM V3.2 FAILS TO ACCURATELY REFLECT UNDERSEA SUBMARINE COSTS FOR HAWAII.

Unlike the rest of the United States, HTI must depend on deep sea submarine cables to provide voice and broadband transport facilities to connect to the mainland. Although fiber is the best choice for interstate connectivity, deploying submarine fiber entails substantial costs, as HTI has fully explained elsewhere.⁷

The CACM v3.2 includes a new Undersea tab in the Capital Expenditures (Capex) workbook with cost inputs for undersea cable and landing stations. These figures are based on

³ HTI recently filed cost information demonstrating these higher costs. Letter from Steven P. Golden, Hawaiian Telcom, Inc. to Marlene Dortch, FCC, WC Docket No. 10-90, *et al.* (filed September 11, 2013) ("HTI Cost Ex Parte").

⁴ Hawaiian Telcom, Inc. Petition for Waiver of Sections 54.309 and 54.313(d)(vi) of the Commission's Rules, WC Docket No. 08-4 (filed Dec. 31, 2007) ("HTI Petition").

⁵ Comments of Hawaiian Telcom, Inc., WC Docket No. 10-90 (filed Mar. 11, 2013); Reply comments of Hawaiian Telcom, Inc., WC Docket No. 10-90 (filed Mar. 25, 2013).

⁶ *See, e.g.*, Letter from Leonard Steinberg, Alaska Communications Systems, to Marlene H. Dortch, FCC, WC Docket Nos. 10-90, 05-337 (filed Jul. 9, 2013) ("ACS July 9 Ex Parte").

⁷ Comments of Hawaiian Telcom, Inc., WC Docket No. 10-90, Appendix, at 9 (filed April 18, 2011) ("HTI Comments").

data provided for Alaska,⁸ but does not utilize all of ACS's proposed parameters. The Commission is correct to include special adjustments for undersea cable costs for price cap carriers serving non-contiguous areas. Although the cost of construction figures per foot are reasonably accurate, the model adjustments still substantially underestimate HTI costs and should be modified.

A. Undersea Transport Percent Use Should Be Applied To Lit Capacity.

The CACM v3.2 develops a %-Use factor based on the highest total capacity and highest lit capacity of existing transpacific fiber cable systems. The resulting %-Use factor is applied to determine the portion of the investment that will be included in the CACM results. The Undersea Fiber investment development is inconsistent with the forward-looking cost methodology used throughout the CACM because the %-Use factor is based on existing facility-specific and route-specific fill factors, which are subject to change by the independent cable consortiums, rather than national averages or simplifying assumptions..

In addition, the CACM v3.2 calculates Hawaii's 7.91 %-Use factor based solely on the undersea cable system with the highest total capacity and highest lit capacity, which yields the lowest %-Use result solely because of the high unused capacity, and not because use of that cable represents the most efficient choice. Applying the same calculation methodology to the TPC5 cable system yields a %-Use factor in excess of 100 percent. The proposed methodology in calculating the %-Use factor is arbitrary, and improperly restricts Hawaii's recovery of the undersea transport costs to 7.91 percent, as explained in the following sections.

The CACM should instead be based only on lit capacity of fiber that an efficient provider would be expected to utilize in the future, based on an average of all available fiber. An efficient owner of undersea cable would not be expected to recover any costs from un-lit

⁸ Public Notice at 2.-8.

capacity, but would concentrate only on the costs for lit capacity that contributes to the recovery of the costs of construction. Any un-lit capacity would only be recovered after the capacity has been lit. Thus, an efficient provider would be expected to build only the capacity that it requires for broadband services (or that would be sold to other users who themselves would pay for their own portion of the cable).⁹ Consequently, the CACM should apply any usage factor to the total lit capacity to ensure accurate recovery of undersea cable costs.

B. An Undersea 50 Percent Middle Mile Sharing Factor Understates Projected Hawaii Usage.

The undersea fiber transport investments in CACM v3.2 are capped based on the assumption that 50 percent of the facility investment would be “shared” with other, non-broadband services (e.g., cost would be recovered through special access and private line services). For HTI, the transpacific undersea fiber costs should not be subject to the 50 percent investment cap for two principle reasons. First, HTI is a minor provider of interstate, interLATA special access and private line services. As a price-cap ILEC operating in a non-contiguous area, HTI does not possess the market power to capture a 50 percent market share. Second, the development of the demand component of the calculation is based on the CACM’s Busy-Hour Offered Load (“BHOL”), which already excludes special access and private line forecasted requirements from its results. The application of a secondary 50 percent investment cap effectively penalizes HTI for having too much forecasted demand for broadband transport, versus available capacity, circumstances which do not exist in reality.

⁹ This principle is consistent with past Commission decisions which would apply fill factors to cable costs to reflect the capacity that an efficient provider would reasonably be able to deploy. *See, e.g., Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, First Report & Order, CC Docket No. 96-98, 11 FCC Rcd 15499, ¶ 682 (1996).

HTI estimates that 90 percent of its existing infeasible right of use (“IRU”) capacity currently is used to provide residential and small business high speed Internet service.¹⁰ This same percentage, at a minimum, can be expected to be used for any expanded capacity in the future. As ACS notes, use of broadband is only expected to increase in the future.¹¹ Therefore, the 90 percent usage factor should be used for HTI.

C. Undersea Cable Inputs Do Not Reflect IRU Applications.

Currently, HTI’s principle method of securing bandwidth capacity to the contiguous states is through IRUs. The undersea fiber inputs for the CACM do not accurately model IRU costs for Hawaii. Rather, the CACM assumes that the current model fully compensates a price cap carrier serving a non-contiguous area. This computation is fallacious for the following reasons. First, IRUs are secured based on forecasted demand and not on the availability of excess capacity. HTI’s projected transpacific capacity¹² would result in a %-Use of 89 to 90 percent, which would be consistent with HTI’s current 90 percent utilization rate. Second, IRUs do not represent forward-looking costs. The cost of an IRU is based on the market value of the capacity being leased. Third, IRU pricing would include the cost recovery of under-utilized, unlit excess capacity, which is not properly included in the CACM undersea cable investment development. Therefore, to be consistent with the FCC assumption that a non-contiguous area price cap carrier would purchase IRUs for transport, the CACM’s forward-looking construction costs must be adjusted to better reflect the impact of cost-recovering IRU purchases.¹³

¹⁰ HTI Cost Ex Parte at 6.

¹¹ ACS July 9 Ex Parte at 13.

¹² HTI Cost Ex Parte at 5.

¹³ In any event, HTI has demonstrated that it must pay higher IRU rates for transport, based on a 90 percent capacity utilization as specified above. *Id.* at 6. These rates do reflect the higher costs of peering that HTI experiences, and will continue to experience in the future, because of its remote location in the middle of the Pacific Ocean. By adjusting the applied

D. Staff Should Modify CACM v3.2 to Permit Adequate Hawaii Cost Recovery, Consistent with Forward-Looking Cost Principles.

Recognizing the higher transport costs associated with undersea fiber facilities, the CACM v3.2 correctly identifies the cost of materials and labor of undersea cable to be about \$11.05 per foot.¹⁴ This higher transport cost per foot should be reflected in the CACM as the cost basis of Hawaii's undersea cable.

To better align the Undersea cable inputs for HTI's broadband requirements, whether HTI constructed a new transpacific undersea fiber facility, or leased equivalent capacity on an existing undersea fiber system, the CACM inputs should be adjusted to reflect a %-Use factor of 90 percent applied to lit capacity. Utilizing the CACM v.3.2 proposed revisions,¹⁵ HTI ran the model with three additional parameters to more accurately reflect HTI forward-looking costs. First, the %-Use factor is computed as the average of all three transpacific systems identified in the Public Notice (AAG, Sothern Cross, and TPC-5), using lit capacity only, and applying a 90 percent fill factor. Second, costs are computed using a lit-capacity-only utilization factor to reflect 100 percent facility cost recovery. Third, an adjustment factor is applied to address 1,642,080 feet of intrastate undersea fiber, which includes a 50 percent sharing adjustment.¹⁶

II. CACM V3.2 SHOULD INCORPORATE EACH NON-CONTIGUOUS AREA PLANT MIX FIGURES AND COSTS.

HTI experiences a higher degree of undergrounding for its facilities than what is experienced on average on the mainland and which is reflected in the CACM. Hawaii's tourism

factors within the CACM model, the undersea fiber construction cost results will become closer, more representative of the incurred IRU costs.

¹⁴ Public Notice at 4.

¹⁵ August 29 Public Notice, *supra* note 5.

¹⁶ See HTI Cost Ex Parte at 6-7 for a more precise description of how these adjustments translate into specific number changes to the model.

industry, the lifeblood of the local economy, requires that the State protect its natural beauty and geographic wonders for future generations, as more fully explained in previous comments.¹⁷

Most new developments require HTI’s facilities to be underground as opposed to buried. While many existing rural areas are predominantly aerial construction, the CACM underestimates the high cost of placing aerial facilities in Hawaii. Therefore, HTI’s pole costs are substantially above those reflected in the CACM.¹⁸

In addition, the Bureau determined that the model would incorporate a matrix of three density zones (urban, suburban and rural) and three infrastructure types for wiring: aerial (“A”), buried (“B”) and underground (“U”).¹⁹ The figures below show the Hawaii-specific plant mix percentages (“HI”) as well as the national average plant mix percentages that the Bureau proposes to use where state-specific figures are unavailable.²⁰ The matrix further breaks down the plant mix according to three types of wiring: distribution wiring, feeder wiring and inter-office fiber.

	Distribution			Feeder			Inter-Office		
	A	B	U	A	B	U	A	B	U
Rural - HI	80%	1%	19%	80%	1%	19%	79%	0%	21%
Rural - National	27%	69%	4%	25%	61%	14%	28%	58%	14%
Suburban - HI	45%	3%	52%	45%	3%	52%	43%	0%	57%
Suburban - National	30%	64%	6%	24%	49%	28%	24%	48%	28%
Urban - HI	35%	2%	63%	35%	2%	63%	24%	0%	76%
Urban - National	38%	55%	7%	19%	40%	40%	20%	40%	41%

¹⁷ HTI Comments at 19-20.

¹⁸ See HTI Cost Ex Parte, at 9.

¹⁹ *Connect America Fund; High-Cost Universal Service Support*, Report & Order, WC Docket Nos. 10-90, 05-337, DA 13-807, ¶ 64 (Wir. Comp. Bur., Apr. 22, 2013) (“*CACM Framework Order*”).

²⁰ *Id.*

The CACM should be adjusted for Hawaii to reflect these changes to the plant mix data in order to enable the CACM to accurately model the costs of delivering broadband services that meet the Commission's CAF Phase II standards in Hawaii.

III. OTHER REVISIONS SHOULD BE MADE TO THE MODEL TO PROPERLY RECOGNIZE HAWAII COSTS.

A. CACM Should Set Hawaii's Soil Type to Hard Rock.

The CACM v3.2 bases construction costs on a nationwide average of four soil types: normal, hard rock, soft rock, and water. Use of this nationwide average in the State of Hawaii substantially underestimates the costs of construction.

The islands of the State of Hawaii were formed through volcanic activity, and thus in order to construct a telecommunications network, HTI is forced to incur the greater expense of erecting poles and laying conduit in dense lava, a construction and maintenance phenomenon not experienced by most of the contiguous United States. Special stainless steel messengers and down guys needed to support cables and to protect infrastructure from corrosive salt air, and work-a-rounds in locations affected by live volcanic activity are just some of the many factors that are unique to the island state. Harsh sun and relentless salt air, although viewed favorably by tourists, wreak havoc on telecommunications networks and increase the costs of materials and maintenance.²¹

Significant construction difficulties in the State of Hawaii are caused by soil composition. For example, the Island of Hawaii has high soil resistivity, due to the presence of oxides, and soft water, which does not conduct electricity as well as hard water. Unlike other mainland sites, Hawaii soils are not usually rich in reactive minerals like calcium carbonate from sedimentary rocks such as limestone. Instead, high soil resistivity is caused by the presence of oxides, which

²¹ HTI Comments at 18-19.

are inert chemical compounds that create poor grounding characteristics. The presence of these oxides makes the grounding of HTI's telephone network much more expensive, even requiring soil conditioning in certain cases. Similarly, fresh water, coming primarily from rain, is soft, not hard and mineral-laden like it is in mainland states. Soft water does not conduct electricity as well as hard water does because it contains fewer dissolved mineral ions. Oxides make equipment grounding difficult and expensive; soft water raises the costs of undergrounding and trenching. The relative youth of the Island of Hawaii also results in higher undergrounding and trenching costs due to the presence of more blue rock.²² These conditions are well known to any company constructing telecommunications plant in Hawaii.²³

As a consequence, the costs of deploying fiber in Hawaii are far above those on the mainland and the average reflected in the CACM.

B. HTI Experiences Higher Shipping and Storage Costs.

The CAPEX values contained in the current CACM understate the cost of transporting broadband equipment and material to Hawaii. Accordingly, the CACM should implement an appropriate increase in the CAPEX costs for Hawaii.

HTI must import nearly all of its materials, increasing its costs. These higher shipping costs are reflected in the higher material costs for Hawaii compared to the costs in the CACM and faced by other carriers on the mainland. In addition, due to the delay caused by the need to ship materials to Hawaii, HTI is forced to carry an above-average value of inventory in order to

²² HTI Petition at 6-12. "Blue rock" is an extremely dense and hard form of volcanic rock found in Hawaii. It "is the bane of contractors, especially road builders and pipeline installers, because it is difficult to break. The largest bulldozers and backhoes are regularly humbled by this dense rock, causing contractors to revert to expensive drilling and blasting techniques." See United States Geological Survey, Hawaiian Volcano Observatory, *Lava Rocks Come in Many Colors*, (Oct. 19, 2000), available at http://hvo.wr.usgs.gov/volcanowatch/2000/00_10_19.html.

²³ See, e.g., <http://www.islandmechanical.com/Services/Telecommunications.asp>.

decrease the time to repair damaged facilities, further increasing its costs.²⁴ Furthermore due to the isolated nature of the Neighbor Islands in Hawaii, HTI must ship equipment by boat or by plane, an expense not faced by mainland carriers. The CACM should include an adjustment to reflect these higher costs.²⁵

IV. CONCLUSION

The Commission's universal service support policies have short-changed non-contiguous areas of the U.S. such as Hawaii in the past, making the provision of advanced voice and broadband services difficult. HTI applauds the Commission's efforts to move forward to grant further CAF support to price cap carriers serving non-contiguous areas. However, the Commission should make changes to the CACM v3.2 to better reflect the costs of non-contiguous areas, as specified herein and the HTI Cost Ex Parte.

Respectfully submitted,

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²⁴ HTI Comments at 19.

²⁵ HTI Cost Ex Parte at 11.